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Women Autonomy in Household Decisionmaking in Nigeria: Analysis of 2013 Demographic and Health Survey Data

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WOMEN AUTONOMY IN HOUSEHOLD DECISIONMAKING IN NIGERIA:

ANALYSIS OF 2013 DEMOGRAPHIC AND HEALTH SURVEY DATA

(TITLE)

BY

TEMIYEMI AKINSUYI

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Women Autonomy in Making Household Decisions in Nigeria: Analysis of 2013 Nigeria Demographic and Health Survey Data

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Eastern Illinois University

2018

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Abstract

Wealth generated in a household unit is very instrumental to the economy at large through involvement in economic activities. A modest step to improving women's voices and participation in the society is to allow them a full range of choices. Consequences of limiting the rights of women is detrimental to households, communities and the economy at large. The specific objective of this study is to examine the association between women's autonomy and household decision making. I do this by analyzing the data from the 2013 Nigeria Demographic and Health Survey. The methodology employed in investigating this relationship is the Ordered Probit regression technique. Major findings from the study reveal that a woman's current age, her education level, her occupation, her husband's educational attainment, her place of residence, her religion, her household wealth, and the region in which she lives affect her ability to make household decisions significantly. The study recommends greater education for women and increased female participation in the labor force as well as improvement of basic amenities in the rural areas.

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Chapter One

Introduction

Autonomy is a multidimensional concept that cuts across political, legal, socioeconomic and cultural structures. Surprisingly, there is no generally accepted definition of autonomy because its use depends on the subject of discussion. For instance, autonomy could be referred to as independent decision-making, in other words, having the freedom to do something or the right to choose to do something in a certain way without someone else deciding what should be done. In discussing the concept of autonomy as it is applicable to women and their household decision making process, it is good to understand the meaning of women's autonomy. It is referred to as the capacity and ability to make decisions independently of others. Dyson and Moore (1983) relate the concept of autonomy as the technical, social and psychological ability to obtain and use information for the process of making personal and other essential decisions and also to the benefit of others. Contemporarily speaking, women's autonomy implies the possibility of a woman making independent decisions without external influence from partners, relatives or society-imposed restrictions.

Theoretically, household decisions should be two-way where both spouses are responsible in making decisions on how to allocate the resources, but interestingly this has not been the case in many developing countries. Women are often told what to do by their husbands or other relatives even though it may be a personal issue in which the women supposedly should retain this autonomy. Consistent with above, one fundamental question that body of literature has failed to accurately address is why women in developing countries are restricted in different degrees from making decisions in a way

that women in developed countries can routinely make. In answering this socioeconomic question, the contributing factors to these problems are crucial. A greater emphasis needs to be placed on critical analysis of data on the indicators of autonomy so that clear policy implications may emerge.

A common feature of many developing societies, even in the era of modern civilization and globalization, is that women are still subjected to patriarchal domination and their duties and roles toward family and the community are stereotypically defined. This study seeks to explore the relationship between women's autonomy and household decision-making in the Nigerian economy. Such a study is desirable to understand the nature and depth of the gap in women's empowerment between the developed and less developed nations.

Before going in-depth into the study, a quick overview of some of the relevant aspects of the Nigerian economy will be relevant. Nigeria is located in Western Africa. It is the most populous country in Africa with an estimated 198 million people based on National Population Commission and according to World Bank data (2015). Life expectancy is still very low at 53 years. A country with a federal system of government, it is officially made up of six geographical regions with many different ethnicities. The Nigerian economy is currently the largest in Africa, enriched with enormous agricultural produces and mineral resources ranging from crude oil to solid minerals. Usually, one expects an economy blessed with many human and natural resources will be economically sound but unfortunately the opposite happens to be the case with Nigeria. Several factors influencing the economic state of the country are presumed to be the level of corruption, low investment in human capital, gender inequality and overdependence in

one sector of the economy. The chief implications of these factors are little economic growth, high unemployment rate, high maternal mortality ratio, and extreme poverty, among others. To avoid some of these problems a good start would be increased economic growth which can be achieved through several socio-economic restructuring and reforms such as increase in productivity for both men and women. Encouraging more involvement of willing and eligible workers especially women in the labor force should lead to higher economic growth. A great deal of a country's level of economic growth and development is determined by contributions of the productive labor force in the country. However, the high unemployment rate in Nigeria could be linked to the point that some able and working age women are discouraged to work out of home or make other personal decisions. According to World Bank estimates on Nigeria's demographics, the percentage of female participation rate in the labor force is 45.4% in 2017 which barely rose in 27 years from 42.3% in 1990. This relatively low female participation presumably results from lower economic autonomy. The percentage of women who have control over their incomes is relatively low. It is plausible to say that little or no control over earnings lead to little or no motivation to work for pay. Financial independence confers some degree of power and encouragement to work. In a nutshell, all these economic indicators have an impact on the development of a country in general.

In Nigeria, according to United Nations Population Fund (UNFPA), the maternal mortality is estimated to be about 867 deaths and 814 deaths per 100,000 live births in 2010 and 2015 respectively. National and world health related statistics show that maternal mortality has been an alarming issue affecting many economies especially low income and lower middle-income countries that results from low per capita health

expenditure. Apart from the low investment in the health sector, another problem is low usage of health services by pregnant women during antenatal care and delivery period. In developing economies, the fraction of pregnant women who seeks help from professional and skilled health workers, and quality of the services provided is relatively low as compared to their counterparts in the developed countries. Over the years, concerns have emerged pertaining low utilization of health care and different measures to reduce high maternal mortality rate, although literature shows majority of the studies done on it has only focused on the improvement and accessibility of the health services but only a few focuses on the effect of women's autonomy on health care decision to strengthen maternal health.

1.1 Problem Statement

As part of the Sustainable Development Goals, an extension of the Millennium Development Goals (MDGs), women empowerment and improvement of maternal health is considered one of the paramount goals of all the developing countries. Barriers on how to spend one's income and seeking health care are more likely to relate to household poverty. Basically, this describes the various indicators of woman's autonomy in some household units. Addressing the issue of women autonomy and household decision makings means that there is a need to understand where exactly the inherent problem still lies in a developing economy even though there are overwhelming changes in this area. One major challenge facing these economies is the deep cultural dimension which takes time to change. On the part of women, having the right or power to make personal decisions empowers them to be great contributors to economic growth and role models.

But being confined to doing only domestic chores has adverse consequences for the economy at large.

There is no doubt that there has been some reduction in maternal mortality ratio, however there is a lot of room for improvement. Different measures have been employed to reduce maternal-mortality ratio, such as access to health care, use of modern contraceptives and information dissemination on the importance of antenatal and delivery care. According to the literature, increasing women autonomy is proven to be a good way to increase the usage of health services especially during pregnancy and delivery time. Despite several efforts to reduce maternal mortality ratio especially in developing countries, they are still faced with this challenge and Nigeria is not an exception. Access to healthcare is not the only problem, proximity to and affordability of heath care also matter.

Cultural and religious beliefs are major contributing factors to the state of maternal health in Nigeria because of the roles played in homes. Predominantly, this continued problem is largely present in the northern region of the country; here young girls are given out to older men in marriage, that itself influences the level of autonomy. Exclusion of women from households decision-making process creates more socio-economic problems which are detrimental to the economy. Another related problem is lower representation of women as gynecologists. Having more female doctors around will favorably influence the use of the health care service on the part of many husbands due to the fact that the professional health worker is a fellow woman. Traditionally, in Nigeria it is easy to teach women how to engage in petty trade without huge investment as compared to the investment in their education for medical practice or other

professional careers. Many of these decisions are made by the partners and relatives of a woman without enough of her input.

Discovering ways of altering these social and economic problems has been ongoing for a long time now. This paper focuses on the area of women autonomy as one of the factors contributing to this problem. It is impossible to talk about the roles of men and women in the household decision-making process, especially in matters of household expenditures and health, without emphasizing women's autonomy. The overdependence on the husband for the provision of health care for women during pregnancy and after childbirth makes it difficult to address women's health issues more generally. This study is geared to examining how women's autonomy influences personal health decision, control over finances and other household decisions in general, and suggesting policy recommendations. Thus, the overall aim of this paper is to identify the various factors that are impediments to the use of public health sector by women and to the autonomously making purchases for the households by women in Nigeria.

1.2 Research Questions

The main research questions in this study are as follows:

- How likely is it that women in Nigeria can make personal health care decisions?
- How likely is it that women in Nigeria have adequate control over their personal earnings?

1.3 Rationale for the Study

Household poverty is reflected in the lack of resources within the family as the level of resources and their allocation among household members are shaped significantly by market outcomes. Over the years, the interest of women's inclusion in decision-making and encouragement of their participation in economic activities has gained recognition by researchers, policymakers, and non-governmental organizations.

Most of the healthcare issues related to maternal mortality in low and middle-income countries especially for a fast-growing African country could perhaps be addressed better if women's participation in decision making about their own health was increased. This underlines the essential role autonomy plays in decision making because the benefits to the economy through greater female participation in the labor force improves overall national productivity and output.

1.5 Organisation of the Study

This thesis is divided into several parts. Chapter two reviews the literature to prepare for a conceptual framework on women autonomy and personal health. Chapter three lays out research methodology that specifies the model and discusses econometric techniques for model estimation. Descriptive statistics of the data, the econometric estimation of the model, and the interpretation of results are the subject of chapter four. Chapter Five presents the conclusions and clarifies policy implications of the study.

Chapter Two

Literature Review

This chapter provides and critiques evidences from the relevant literature on the concept of women autonomy, the indicators of autonomy, and why women's autonomy is an important precondition for making good personal decisions by women, with a special emphasis on Nigeria. Subsections will evolve from this part entailing the conceptual review on women autonomy by different scholars that will help to broaden our knowledge of the term. This chapter also reviews theoretical framework underlying household decisions and women's participation in decision-making, and discusses empirical findings from the extant literature.

Over the last few decades, one of the ongoing debates in Nigeria is gender equality and women's empowerment which has drawn wide attention of researchers, women activists, the government, public health officials, international government and non-government organizations and many others. A popular statement goes thus, that health is wealth, so women should be allowed to make independent decisions especially about their own health-related matters to avoid preventable diseases and mortality.

Furthermore, focus on which aspects of health care decision-making is included in women's autonomy could be a sensitive matter. This continues to pose threats to women's welfare especially when making health care decisions. It is only not prevalent in African countries like Tanzania, Ethiopia, Nigeria, Ghana, and Chad but also in South and South East Asia, countries like Nepal, Pakistan, India and Bangladesh, to mention a few. The term autonomy has no universally accepted standard definition.

Notwithstanding, different scholars and researchers have suggested their diverse opinions on how to define autonomy.

According to Basu (1992), autonomy can be defined as the capacity and freedom of a woman to act independently on her own. The term women's autonomy has come to be synonymous with the word freedom, choice and rights. In general, this is due to the proven fact that the autonomous power of a woman has been linked to decision-making in a male dominated society. A group of researchers in their study points out a definite meaning of women's autonomy as the extent of independent decision-making, freedom from constraint on physical mobility, and the ability to forge equitable power relationships within household units (Nigatu et al, 2014). From the aforementioned meanings, women autonomy could be based under four categories such as control over household decisions, health care decision, financial independence, and freedom of movement.

2.1 Theories of Household Decision Making

A unitary model and a model of bargaining within the household stand out in the body of literature on household decision-making. The unitary model is a microeconomic theory of household which assumes that the household unit behaves as a single decision maker. The household members maximize welfare based on the utility function subject to a budget constraint. Majority of the decisions made are influenced by individual preferences and distinct behaviors. Family members' preferences and behaviors in a household may be independent of one another but to some extent interdependent as well.

Generalization of the behavior of the household as a single decision maker made the unitary model unacceptable because the distinctive features of human behavior can be highly significant in making household purchases and other decisions. This gives rise to the need for a model that will directly incorporate conflict of interests within the household.

Bargaining power, also known as Nash bargaining power, is the main feature in a non-unitary model. In simplest words, bargaining means negotiation among household members to advance the common good of the household through agreements and compromises. Negotiation in interspousal communication is necessary for effective allocation of resources in the household. So, the importance of the bargaining power in this study is about the negotiations that goes on within the household in order to arrive at a decision regarding individuals, household resources and expenses.

2.2 Empirical Evidence

Much of the research on autonomy supports the existence of a relationship between women autonomy and household decision making process. The level of women decision-making plays a major role in preventing challenges facing households.

Umar (2017) used Nigeria DHS dataset to examine the role women's education plays determining their autonomy in the use of medical services during antenatal and delivery periods. He finds that education has a strong association with the number of antenatal visits and place of delivery after controlling for age, parity income, religion, and distance. The study recommends more education for girls in the country. On the contrary,

educational attainment do not have a direct influence on women's autonomy in Tajikistan but a positive association exists between partners' educational level and women's autonomy (Kamiya, 2011).

Daniyan-Bagudu et al. (2016) employed logistic regression to investigate household decision making process of 350 women in public service and its influence in Nigeria. In their investigation, they found that there is a significant positive association between women decision making and family health care. Beyond the concerns about women decision-making in their households, they strongly recommend a program to raise awareness among partners about women's role and its importance in household decision-making.

Data from two Asian countries, Bangladesh and Nepal, show that variables such as increased age, higher level of education, residency in urban areas, paid employment, household wealth, and greater number of living children show a positive and significant relationship with greater autonomy (Haque et al., 2012; Acharya et al., 2010).

In their study based on the unitary household model, Self & Grabowski (2012) use data from World Bank's Living Standard Measurement Survey for the states of Uttar Pradesh and Bihar in India from 1997-1998. The hypothesis of the paper is that unhealthy women are more likely to use professional medical services rather than traditional care when they have autonomous power. Their empirical results show that greater a woman's freedom of mobility higher is the likelihood that she will see a professional medical doctor when she is sick (as opposed to a traditional indigenous health practitioner).

Senarath & Gunawardena (2009) employed bivariate analysis to examine women's autonomy on their healthcare decision and its determinants of autonomy in

three South Asian countries. Controlling for age, education, employment status, number of living children their empirical findings suggest that decision-making power of women concerning their health care was relatively very low in Nepal as compared to the two other countries (Bangladesh and India). Subsequent inclusion of Sri Lankan data from DHS 2000 in their analysis shows that an increase in age, educational level, and number of children increases women's participation in the decision making process. The paper recommends a free education policy for both males and females to encourage increases in enrolments in schools, and a clear policy framework on employment for men and women. Senarath and Gunawardena (2009) and Umar (2017) both recommend increased educational attainment for women as a goal of policy.

According to Situ & Neupane (2016), women's decision-making power plays a significant role in health care utilization. Using Nepal Demographic and health Survey (NDHS, 2011) the study focused on a total of 4148 married women who gave birth in the 5years preceding the survey. Like other studies, the autonomy of women was assessed using four indicators listed as healthcare decision-making, visitation to relatives and friends, household purchases and spending earned money. Although the health workers' attendance was grouped into skilled and unskilled during the time of pregnancy and delivery, the main focus is on skilled attendance. The authors employed the use of logistic regressions to analyze the relationships. Their findings suggest that most married women had a medium level of autonomy and just a few had high autonomy. Also, the evidence shows a higher likelihood of women accessing professional healthcare services during pregnancy and delivery using four indicators of autonomy. This result is consistent with Matsumura and Gubhaju's (2001) earlier findings of a positive

relationship between education and utilization of health care. Furuta and Salway (2006), on the other hand, find a weaker association between women's autonomy in healthcare and the use of skilled attendants.

Bloom et al. (2001) investigates the determinants of women's autonomy in three specified areas namely finance, decision making power, and freedom of movement. They used survey data from November 1995 to April 1996 for a part of their larger study on maternal health care use among poor to middle-income women residing in Varanasi, India. Using logistic regression to determine women's autonomy in the three different contexts, their results indicate that age was marginally significant in the models for high control over finances and decision-making power but strikingly exhibited a significant explanatory power on high freedom of movement. Education also showed a positive relationship with all the three aspects of autonomy but was statistically significant only for greater freedom of movement. In addition, it was evidenced that working-class women were much more likely to have control over finances, high decision-making power and a high freedom of movement. However, economic status of women did not play any vital role in determining their autonomy in any of the three areas studied.

Further exploring the relationship between the three areas of women's autonomy and antenatal care utilization, women with greater freedom of movement had greater levels of antenatal care which meant they were more probable to utilize safe delivery care, after controlling for all other factors. Concluding their paper, Bloom et al., (2001) propose that a strong concerted effort needs to be made to investigate the effects of different types of empowerment programs in changing the dynamics of already

documented women's social position. They suggest the need for more work to study how the deleterious effects of strong gender stratification can be improved.

Bhandari et al. (2016) in their paper explored women's autonomy and its associated correlates in the Kapilvastu district of Nepal. Based on their cross-sectional data, the authors develop three scales to capture women's autonomy, namely decision-making autonomy, financial autonomy and freedom of movement autonomy. The target population for the study consists of married women of child-bearing age who had full term delivery within a year and had completed their postnatal period. The main variables utilized for this research included women's education, husband's education and economic status of women as key predictors. Also considered were couple's literacy level, couple's occupation, and economic status of household. Bhandari et al.'s (2016) findings show that the overall women's autonomy status was lower than expected in Kapilvastu district. On comparative grounds, decision making autonomy and freedom of movement autonomy scored higher than financial autonomy of women. However, this varied with the demographic and socio-economic characteristics of the sample units. Bhandari et al., (2016) found that, women's autonomy was significantly associated with higher age difference at marriage, advantaged caste/ethnicity, higher education status of women and their husbands (more than 10 years of schooling), and better husband's occupation and economic condition of the family.

Additionally, women who had improved socioeconomics characteristics were more probable to enjoy relatively higher autonomy at the household level. Adjusting their models for direct and indirect correlates of women autonomy, the authors also found that education had a strong direct relationship with the independence of women. It should be

noted that, the multivariate analysis of the study indicated a mediation effect of husband's education and economic status of the household having a strong pathway influence on women's autonomy. Based on the outcome of their study, Bhandari et al., (2016) recommended that improving education level and economic status of women and their husbands may be the best remedy to promote the autonomy of women in Nepal.

Bankole & Singh (1998) analyzed couples' perception on the use of contraceptive on 18 developing countries from 1990-1996. The results from their logistic regression shows that the use of contraceptive is relatively low for women as compared to men. On the other hand, a statistical significant prediction of modern contraceptive was evident in 14 countries. Couple's conflicts on the number of children to be born, six of the selected countries reported that the woman's opinion supersedes the husband's.

According to Ahmed (2015), used an instrument variable in determining the relationship between women and intrahousehold bargaining power in Ghana. He found a positive association between women's power and their children health outcomes that is when women have power in the home, better health outcomes for their children.

Danforth et al., (2009) investigated couple's perceptions on health system. Using a cluster sampling, only 826 couples were eligible participants due to the age restriction from a total population of 33,000 population in Kasulu town. However, the paper used multivariate logistic regression to explore partners' influence on the use of professional health care to reveal the importance. A major finding of the paper is that partner's agreement regarding the essence of delivery in the facility is associated with a higher likelihood of the women delivering at the health facility. This explains the fact that the couples' perception cannot be overlooked in terms of the result that women are more

likely to deliver in the facility than at their houses. In the event where the partners disagree, the woman's opinion has a greater effect on the choice of the place of delivery. In conclusion, the authors encourage men's involvement in matters of reproductive health.

Chapter Three

Methodology

To investigate the effect of women's autonomy on health care decision making, we will employ the dataset from Nigeria Demographic and Health Survey (NDHS) conducted in 2013. This is the most recent survey and provides the necessary demographic and health information needed to achieve our proposed objectives and answer our research questions. The survey generated data on 38948 sample households. Of these, only 26403 married women at the time of the survey comprise our sample because of data availability on the variables relevant for this study. The 2013 Nigeria DHS is a cross-sectional survey done on six regions (north central, northeast, northwest, southeast, south-south and southwest). Stata13 software will be used for econometrically estimating our models.

3.1 Dependent Variables

The DHS questionnaire included questions on different measures of autonomy. This study will only focus on two areas of women's autonomy in decision making. The autonomy measure is constructed based on answers to the following two questions, about "the person who usually decides on respondent's health care" and "the person who usually decides how to spend respondent's earnings." These could be understood to indicate autonomy on health care decision and financial independence. Each question had the following responses: (1) respondent alone; (2) respondent and husband/partner; (4) husband/partner alone; (5) someone else and (6) others. Response (3) did not appear in the codebook. For this study, women's autonomy will be coded as 3 for Full autonomy, 2

for partial autonomy and 1 for no autonomy. The other responses are not entirely relevant for this study since we are only concerned about responses from the household members since those from others may not represent accurate situation in the household.

3.2 Independent Variables

Many individual, household and community characteristics will be included in the probit regression to understand how they affect women's autonomy. These sociodemographic indicators in the DHS data include respondent's age, number of living children, child gender, respondent's educational attainment, respondent's occupation, husband's age, husband's educational attainment, husband's occupation, wealth index, religion, region, residence, distance to health facility, land ownership and media exposure through the mobile phone. Most of these predictor variables are categorical rather than continuous. DHS data referring to the educational attainment for both spouses is highest education level. Like many other variables, the respondent's occupation will also be divided into categories.

3.3 Description of Variables

Age

Human age is considered a continuous variable, for respondent ranging from 15-49 years while their husband's age is between 16-99 years. Young girls given out in marriage at an early age are often told what to do resulting in unwanted pregnancies and complications during pregnancy.

One major justification for using this variable is because it shows level of maturity. However, research on women autonomy has shown that attainment of autonomy is related to age. For example in Ghana, the current age of Ghanaian woman has been found to play a role in determining her level of autonomy in health care usage (Fosu, 1994).

Educational Attainment

Knowledge is power in many different ways. To educate a woman is to empower her. Higher educational attainment improves people's decision-making especially in health and makes them more self-confident. Education puts people at an advantage through academic skills acquired and ability to obtain and use information to their advantage. Investment in human capital is seen as promoting economic growth according to a large body of research. Progress in ensuring that more girls are enrolled into schools has increased in Nigeria over years, although some rural parts do not welcome the idea due to their religious beliefs. Four groups were created for both respondent and husband's educational level: those not having education, those in primary school coded as 1, those in secondary school coded as 2 and those in higher school coded as 3. The reference category is those with no education coded as 0.

Occupation

Engagement in paying jobs has an impact on the economic status of anyone. Presumably, a woman's employment for pay leads to greater participation in household decision-making because will be less dependent on others in ensuring better standard of

living for themselves. In a patriarchal society with stronger male domination, women participation in the labor force is taken relatively lightly. Growth models do not distinguish between men and women for the contribution of human capital to economic growth even though growth potential from women's human capital expansion could be large. For occupation we can create five categories to study their relationship with autonomy in health decision making: not working is our reference category coded as 0, Agric Workers includes people working in their own farms or in those of others and is coded as 1, Sales and Services coded as 2, professional, technical and managerial workers assembled in group 3, and skilled and unskilled manual workers into group 4. Under the husband's occupation, similar regrouping was performed.

Number of Living Children and Children Gender

For a country like Nigeria, having more male children tends to confer benefits to women in terms of greater autonomy. Women with none or one child are less likely to be involved in decision-making especially if the type of marriage practiced in the household is polygamy. A respondent with no child is used as the reference category coded as 0, 1-2 children coded as 1, 3-4 children coded as 2 and finally 5 children and above coded as 3.

A woman having a male child is placed in the reference group (male = 0) and if not then male = 1. Some states in Nigeria have preference for male children due to the opinion that the boys carry the family names while the female daughters would be married out.

Religion

Most African countries are religion-based economies and these different groups of religion play a major role in household decisions where the woman's role may be limited as wife to her husband and mother to her children. Some religious beliefs on women's rights place constraints on their participation in decision-making. The motivation behind the inclusion of this variable is because religious beliefs affect women's ability to play certain roles with submission to her partner and possibly forgoing her own desires. Religion is divided into Christian, the reference category coded as 0, Muslim coded as 1, traditional coded as 2 and others coded as 3.

Residence

The place of residence for women could affect her ability to make her own decisions. Residence is categorized as rural for the reference category (coded as 0) or urban coded as 1.

Region

Under President Ibrahim Babangida Nigeria was divided into six regions or geopolitical zones, namely North Central, North East, North West, South East, South-South and South West recoded in this study as 0, 1, 2, 3, 4 and 5 respectively. Just like place of residence is one major indicator for women status in the society, grouping the 36 states and 1 Federal capital into regions could have a bearing on why some women have less or more autonomy. The reference category is North Central which consists of 7 states namely Niger, Kogi, Benue, Plateau, Nassarawa, Kwara and FCT. North East consists of

6 states namely Bauchi, Borno, Taraba, Adamawa, Gombe and Yobe. North West consists of 7 states namely Zamafara, Sokoto, Kaduna, Kebbi, Katsina, Kano and Jigawa. South East consists of 5 states namely Enugu, Imo, Ebonyi, Abia and Anambra. South South region consists of 6 states namely Bayelsa, Akwa Ibom, Edo, Rivers, Cross River and Delta. South West region consists of 6 states namely Oyo, Ekiti, Osun, Ondo, Lagos and Ogun. According to Aseweh et al. (2011), geographical location has influence on women's use of health care services during maternity.

Wealth Index/ Media Exposure

At the community level, household wealth is a key indicator in explaining autonomy. Globally, wealth confers some level of exposure to people which increases their social status. Wealth is a composite measure of a household's cumulative living standard grouped into poorest, poorer, middle, richer and richest. Both poorest and poorer were regrouped into poor category, those in middle class was unchanged while richer and richest were regrouped into rich category. The reference category is poor.

Distance to Health Facility

Improvement of health care services is a major factor alongside proximity of these health services that could enhance utilization of health services by women during personal and children's health related issues. In the case where getting to a health center is difficult or transportation cost is high, women are discouraged from using professional health care. They may resort to using traditional or relatively unskilled medical and nursing practices for which women may not be required to seek permission of their

husbands. It is considered less costly. Difficult access to a health care center is our reference category and recoded as 0, and easier access as 1.

Asset Ownership

Asset ownership in this study includes land, farmland, housing, cars and others. If the woman has owned some land from before her marriage, coming from a wealthy family, the likelihood of her making certain decisions without seeking her partner's consent may be higher. Land ownership has been categorized into none as the reference category (0), own alone coded as 1 and jointly owned coded as 2.

3.4 Model Specification

Based on reviews of literature we can estimate the following ordered probit models relating women's autonomy with a number of household characteristics:

Model I

$$\text{HealthAuto}_i = \alpha + \beta_1\text{Womanage} + \beta_2\text{Numchildren} + \beta_3\text{Male} + \beta_4\text{Womanedu} + \beta_5\text{Womanoccu} + \beta_6\text{Husbandage} + \beta_7\text{Husbandeduc} + \beta_8\text{Husbandoccu} + \beta_9\text{Wealthindex} + \beta_{10}\text{Relig} + \beta_{11}\text{Resc} + \beta_{12}\text{Reg} + \beta_{13}\text{Distancehea} + \beta_{14}\text{Ownland} + \beta_{15}\text{Mobphone} + e_i$$

Model II

$$\text{FinAuto}_i = \alpha + \delta_1\text{Womanage} + \delta_2\text{Numchildren} + \delta_3\text{Male} + \delta_4\text{Womanedu} + \delta_5\text{Womanoccu} + \delta_6\text{Husbandage} + \delta_7\text{Husbandeduc} + \delta_8\text{Husbandoccu} + \delta_9\text{Wealthindex} + \delta_{10}\text{Relig} + \delta_{11}\text{Resc} + \delta_{12}\text{Reg} + \delta_{13}\text{Ownland} + \delta_{14}\text{Mobphone} + e_i$$

where:

$HealthAuto_i$ and $FinAuto_i$ represents the ordered category of the dependent variable

α represents the constant term

β's and δ's represents the coefficients indicating the marginal effects of respective variables

e represents stochastic error term

Descriptive statistics on the socioeconomic and demographic factors will be discussed. Finally, Ordered Probit regression technique will be used to explore relationships among variables. One foremost important characteristics of using this technique is it is a useful method to estimate categorical dependent variables that have multiple values rather than being binary. From the correlation matrix reported in the appendix, neither model suffers from a high correlation among independent variables.

Chapter Four

Empirical Results

This chapter provides the results of the empirical model of women's autonomy as related to numerous socioeconomic variables discussed in the last chapter.

4.1 Descriptive Statistics

Table 1: Health Care Decision

Person who usually decides on respondent's health care	Frequency	Percent	Cum.
Respondent alone	1,653	6.29	6.29
Respondent and husband/partner	8,706	33.12	39.41
Husband/partner alone	15,925	60.59	100.00
Total	26,284	100.00	

Table 1 depicts percentage distribution of responses on respondent's health decision. Approximately 6 percent of currently married women in this survey make health decisions independently while roughly 33 percent of the respondent's make decisions jointly with their husbands regarding personal health issues. Finally, 61 percent of the responses indicate a dominant role of the husband in making decisions about the woman's health related issues.

Table 2: Earnings Decision

Person who usually decides on how to spend respondent's earnings	Frequency	Percent	Cum.
Respondent alone	12,208	70.32	70.32
Respondent and husband/partner	3,387	19.51	89.83
Husband/partner alone	1,766	10.17	100.00
Total	17,361	100.00	

Table 2 shows the percentage distribution on respondent's financial independence. 70 percent of the respondents reported to have power on how to spend their earnings out of the 17, 361 women under consideration. Only 10 percent of them responded that their husbands decide how to spend their earnings. On the other hand, 20 percent of the women make joint decisions on how to spend their earnings with their husbands.

4.1.1 Percentage Distribution

In Table 3, a total sample size of 26,284 shows the percentage distribution of sociodemographic factors of married women and three specific health care responses such as respondent alone, respondent and husband and husband alone. Observation from this table shows that 1 percent of the respondents within 15-19 years of age make health decision alone as compared to 83% whose husbands make health care decisions. Within the 35-49 age group, 10 percent of women have full autonomy while 53 percent have no autonomy. In the 20-34 age group, 33% jointly make health care decisions with their partners.

Notably, the number of living children has some association with a woman's power in her household. 34% of women with 3 or 4 children, and also 5 or more children are the sole decision makers in health while for 28% and 31% of women their health care decisions are made by their husbands. As the level of a woman education increases, the frequency distribution indicates that 29% and 41% of them in primary and secondary schools respectively are having the sole autonomous power relating to their health decisions. The highest number of respondents and frequency distributions reported are shown in the secondary level of education, while the lowest is reported in the higher level.

Under woman's occupation and husband's occupation only 2 percent and 17 percent of the women not working have autonomous power across the three levels of autonomy while 81 percent and 36 percent of them responded that most of the health decisions are made by their partners. 47% of the women whose husbands are not working reported that their health decisions are jointly made. Among classes of occupation, 8% (of respondents) and 6% (of their husbands) of currently married women working under sales and services category, and 5% and 8% in manual workers category have full autonomous right to decide about their personal health. From the three levels of household wealth, the percentage distribution of women whose household shows that only 8% and 10% of them in middle and rich class respectively are sole decision makers on health-related matters, while across the three levels of autonomy 35% and 49% responded that the decision is jointly made by both spouses. However, 58% of them in the rich class responded to have autonomous power. The portion of the women from poor household is 298 out of the total sample indicating only 3% make independent decisions

as compared to 78% for whom health decisions are made by their partners. These responses mean that women from poor households have little or no choice concerning their health issues and that it is their husbands who are the primary decision makers in women's health matters.

The proportion of women living in the urban area shows that 10% of them make decisions autonomously while only 4% of them do so in rural areas across the three levels of autonomy. Among the six regions in Nigeria, the table shows only 37% of the currently married in the South West have autonomy while 45% of these women in North West region responded that their husbands make their health decisions. On the degree of autonomy level comparison, when distance to health facility is not a big problem, it shows that only 5% of these women have full autonomy while 26% and 69% have partial and no autonomy respectively. In terms of media exposure only 7% currently married women having mobile phones have full autonomy while 36% of these women respond that health decisions are made jointly. Furthermore, the remaining 57% responded that their husbands alone make the health decisions.

Table 4 depicts the percentage distribution of 17,361 married women with some sociodemographic factors and three specific responses on respondent's earnings. Across the various age groups, the proportion of women within the 35-49 age group indicates that 46 percent of them have full autonomy as compared to 5 percent of women in the 15-19 age group on deciding how to spend respondent's earnings. This shows that the percentage of women with less than 19 years of age having full autonomy is low and this is not surprising because most young women within this age group have almost all, if not all, of their health decisions made by others, mainly spouses or elders in the family.

However, on a level of autonomy basis, 69 percent of these respondents within 20-24 age group indicate full autonomy while the remaining 20 percent and 11 percent have partial and no autonomy respectively, about spending their personal earnings.

Among all the three 3 distinct age groups, the percentage distribution of currently married women having full autonomy increased for earning decisions by 5 percent, but only 1 percent in health care decision. On the responses about who usually decides how the respondent's earnings are being spent, the number of living children has some relationship with a woman's autonomous power in her household, so having 3-4 or 5-plus children shows that 32% and 35% of these women are the sole decision makers about spending their earnings while only 6% of these women with no child have full autonomy on how to spend their income.

With respect to woman's education, 21% and 25% in primary and secondary schools respectively have full autonomous power over their income spending. Surprisingly, across the three levels of autonomy, 81% of women without education have autonomous power on their earnings and only 9% of them responded that their husbands decide how to spend their income. From the three distinct husband age groups, women whose partner's age is 40 and above report that 64% make autonomous earning decisions while only 3% do so in the 16-25 age group.

Looking at the husband's occupation, 1% of the women whose partners are not working have autonomous power while 32% of those whose husbands are agricultural workers responded to have full autonomy about their earnings. In the sales and services category of occupation, 74% and 18% responded to have full and partial autonomy over income spending. Also, for husbands working as manual workers, 74% of these women

responded to have being the sole decision maker on income spending. Reasonably, 40 percent of these women in the rich class, among other wealth classes, responded as having autonomous power while only 18 percent were in the middle class. Among the women from the middle class, 65% of them have full autonomy over their income spending while the remaining 22% and 13% respectively have partial autonomy because they jointly make decisions with their husbands and have no control over their finances respectively. In the rich class, 67% of them responded to have full autonomy while the remaining 24% and 9% of them have partial and no autonomy over their income spending respectively.

On the other hand, among women living in the urban and rural areas 69% and 71% are sole decision makers about how their income is to be spent while 22% and 18% of them have partial autonomy. Among these two places of residence, 62% of them have full autonomous power while the remaining 38% who live in the urban area have control over their income spending.

The regional distribution of women indicates that only 21% of the currently married in the South West and 38% of women in the North West have full autonomy over their incomes. In the South East and South-South respectively only 42% and 54% of women report having full control over their earnings while 36% and 33% of women have partial autonomy. Among women classified by land ownership, full autonomy is indicated by 84% who have no land, and only 6% and 9% with sole ownership and joint ownership respectively. Having more land makes husbands obtain control over spending of women's earnings.

Under the media exposure, while 78% of the currently married women having mobile phones reported full autonomy, and only 22% not having mobile phones had full autonomy.

4.2 Discussion of Results

4.2.1 Ordered Probit Results

Findings reported in Table 7 show the results of ordered probit model. As age increases by a year, the probability of a married respondent making her own health decision jointly with her partner or by herself increases. Stated differently, the higher the age the more likely the woman will have full autonomy concerning her health decisions. As level of education increases from primary to secondary and higher, the probability of a married respondent's partner making health decision decreases, that is, the respondent is likely to make full decision about her health.

The type of occupation a married woman has indicates her role in taking some decisions. With respect to personal health decisions, the probability of the decisions being jointly made by either both spouses or autonomously by herself increases. There exists positive relationship between number of living children of the respondent and health decision. That is, the probability of making joint decision concerning her own health with her husband or solely by herself decreases. Although from the p-values the effects look insignificant.

Similar to respondent's educational level, partners' educational attainment shows that the probability of the woman jointly making decisions increases. Primary and

secondary school level was significant but higher educational level came out insignificant. With respect to age the coefficient of husband's age is insignificant whereas the husband's type of employment shows influence on the autonomous power of the respondent. A respondent whose husband is a manual worker has a higher probability of her personal decisions being jointly made or independently made although once again the effects are rather insignificant. However, we find significant relationship for those whose husbands are under sales and services group of occupation.

The other group of occupation such as professional/technical/managerial worker was insignificant. The probability that a respondent living in rural area makes her health decision decreases. However, the married woman is more likely to have full autonomy concerning her health decisions if she lives in an urban area. The probability that a married woman practicing a religious belief other than Christianity will make her own health decision decreases. A married respondent in the middle or rich category of wealth has a higher probability of making her own health care decision under full or partial autonomy.

It is not hard to believe that some states in some geopolitical zones in Nigeria have male members acting in a domineering manner, so the probability of respondent making her health decision with her partner or husband alone increases. As far as child gender is concerned, the probability of a married woman having a female child making her health decision increases, which shows greater awareness of the value of developing human capital for both male and female children as compared to the perception on the part of older generations.

Neither the coefficients for the distance to health facility nor the coefficients of land ownership are significant. Respondents having a mobile phone seem to have a higher probability of making their own health decision.

Table 8 reports the ordered probit results for autonomy in a woman's spending out of her own earnings. Higher age is associated with a higher probability of a married respondent spending her own earnings. This means that the respondent is more likely to have full autonomy regarding her financial decisions without her partner's consent. As the level of education increases from secondary to higher, the probability of a married respondent with partial autonomy being able to spend her own income increases relative to a woman with no education. But this probability is less for a woman who only has a primary level education. Similar to making personal health decision, the probability of the respondent' spending decisions increases across the different classes of occupation relative to nonworking women.

From the negative coefficients of the number of living children, the estimations show insignificant p-values similar to the effects in matters related to health decisions. As the educational attainment of the respondent's husband goes up, the probability decreases in deciding how respondent's income is spent. Similar to health decision, the p-values of the husband's current age is insignificant. Suggesting that the decision within households should not be confined to only one party is to ensure effective allocation and distribution of resources. A respondent whose husband is a manual worker has a higher probability of making her personal earning decisions. Women whose husbands are in the professional/technical/managerial worker category display zero change (due to high p-values) in their probability of making their own decisions. The probability that a married

respondent living in rural area make their decisions regarding their personal earnings decreases although it is again insignificant. The probability that a married woman practicing a religious belief other than Christianity will make decisions concerning her personal earnings is greater for an Islamic or Traditional worshipper.

The results for household wealth index and child gender under the earnings decisions are insignificant. In terms of the region of residence the effects are significant other than for the South East region which implies that the probability of a married respondent making decisions regarding how to spend her earnings is greater than for the reference region. In terms of asset ownership, the results are insignificant for a married woman who fully owns some land, under full autonomy. More significant results are found for women for whom the land is jointly owned.

Table 5: Health Decision (Marginal Effects)			
	Full Autonomy	**Partial Autonomy**	**No Autonomy**
	dy/dx	**dy/dx**	**dy/dx**
womanage	0.0014*** (0.0002)	0.0024*** (0.0003)	-0.0038*** (0.0005)
womanedu			
No edu (ref)			
Primary	0.0170*** (0.0028)	0.0364*** (0.0064)	-0.0534*** (0.0091)
Secondary	0.0262*** (0.0033)	0.0524*** (0.0072)	-0.0786*** (0.0105)
Higher	0.0289*** (0.0056)	0.0568*** (0.0105)	-0.0858*** (0.0161)
woccupationgrp			
Not Working (ref)			
Agric Workers	0.0426*** (0.0034)	0.1013*** (0.0073)	-0.1440*** (0.0105)
Sales/ Services	0.0423*** (0.0021)	0.1008*** (0.0056)	-0.1432*** (0.0075)
Prof/Tech/Managerial	0.05074*** (0.0055)	0.1140*** (0.0096)	-0.1648*** (0.0148)

Manual Workers	0.0310**** (0.0032)	0.0804*** (0.0073)	-0.1114*** (0.0104)
numchildren			
0 (ref)			
1-2	-0.0053 (0.0098)	-0.0084 (0.0151)	0.013738 (0.0249)
3-4	-0.0074 (0.0099)	-0.0119 (0.0151)	0.0194 (0.0249)
5+	-0.0138 (0.0099)	-0.0232 (0.0153)	0.0369 (0.0253)
hubbyedu			
No edu (ref)			
Primary	0.0186*** (0.0032)	0.0339*** (0.0061)	-0.0524*** (0.0093)
Secondary	0.0146*** (0.0032)	0.0273*** (0.0064)	-0.0419*** (0.0096)
Higher	0.0021 (0.0040)	0.0043 (0.0082)	-0.0064 (0.0122)
hcurrtage			
16-25 (ref)			
26-39	-0.0006 (0.0055)	-0.0010 (0.0098)	0.0016 (0.0153)
40+	0.0031 (0.0060)	0.0054 (0.0106)	-0.0085 (0.0166)
hoccupationgrp			
Agric Workers (ref)			
Sales/ Services	-0.0102*** (0.0028)	-0.0187*** (0.0052)	0.02887*** (0.0080)
Prof/Tech/Managerial	-0.0018 (0.0038)	-0.0030 (0.0065)	0.0048 (0.0102)
Manual Workers	0.0007 (0.0030)	0.0012 (0.0050)	-0.0019 (0.0079)
Not Working	0.0438*** (0.0122)	0.0561*** (0.0121)	-0.0998*** (0.0242)
residency			
Urban (ref)			
Rural	-0.0072*** (0.0025)	-0.0126*** (0.0044)	0.0198*** (0.0070)
relgn			
Christian(ref)			
Muslim	-0.0392*** (0.0026)	-0.0833*** (0.0063)	0.1225*** (0.0087)
Traditionalist	-0.0068 (0.0010)	-0.0112 (0.0170)	0.0181 (0.0270)

Other	-0.0159 (0.0409)	-0.0277 (0.0800)	0.0436 (0.1209)
wlthindex			
Poor (ref)			
Middle	0.0169*** (0.0029)	0.0334*** (0.0059)	-0.0503*** (0.0087)
Rich	0.0195*** (0.0034)	0.0380*** (0.0071)	-0.0575*** (0.0104)
region			
North Central (ref)			
North East	-0.0157*** (0.0033)	-0.0360*** (0.0077)	0.0517*** (0.0109)
North West	-0.0460*** (0.0027)	-0.1484*** (0.0084)	0.1944*** (0.0106)
South East	0.0076* (0.0045)	0.0145* (0.0084)	-0.0221* (0.0128)
South South	-0.0030 (0.0038)	-0.0061 (0.0079)	0.0090 (0.0117)
South West	0.0429*** (0.0044)	0.06399*** (0.0065)	-0.1069*** (0.0108)
childgender			
Male (ref)			
Female	0.0039** (0.0019)	0.0068** (0.0033)	-0.0108** (0.0052)
distancehealth			
Big Problem (ref)			
Small problem	0.0030 (0.0023)	0.0053 (0.0040)	-0.0084 (0.0063)
ownland			
Does not own (ref)			
Alone only	-0.0006 (0.0040)	-0.001 (0.0069)	0.0016 (0.0109)
Jointly	-0.0023 (0.0029)	-0.004 (0.0052)	0.0063 (0.0081)
mobileph			
No (ref)			
Yes	-0.0053* (0.0028)	-0.0089* (0.0046)	0.0141* (0.0073)

P-values: significance ***1%, **5%; *10%

Table 6: Earnings Decision (Marginal Effects)			
	Full Autonomy	**Partial Autonomy**	**No Autonomy**
	dy/dx	**dy/dx**	**dy/dx**
Womanage	0.0016***	-0.0008****	-0.0009***
	(0.0006)	(0.0003)	(0.0003)
Womanedu			
No edu (ref)			
Primary	0.0075	-0.0038	-0.0038
	(0.0105)	(0.0052)	(0.0053)
Secondary	-0.0180	0.0087	0.0093
	(0.0120)	(0.0059)	(0.0062)
Higher	-0.0583***	0.0270***	0.0313***
	(0.0190)	(0.0086)	(0.0104)
Woccupationgrp			
Agric Workers (ref)			
Sales/ Services	0.0888***	-0.0403***	-0.0486***
	(0.0114)	(0.0050)	(0.0066)
Prof/Tech/Managerial	0.0826***	-0.0372***	-0.0455***
	(0.0180)	(0.0084)	(0.0097)
Manual Workers	0.1341***	-0.0642***	-0.0700***
	(0.0139)	(0.0068)	(0.0074)
Numchildren			
0 (ref)			
1-2	0.0076	-0.0037	-0.0039
	(0.0320)	(0.0154)	(0.0166)
3-4	-0.0042	0.0020	0.0022
	(0.0321)	(0.0154)	(0.0166)
5+	-0.0034	0.0016	0.0018
	(0.0324)	(0.0156)	(0.0168)
Hubbyedu			
No edu (ref)			
Primary	-0.0121	0.0060	0.0062
	(0.0110)	(0.0055)	(0.0056)
Secondary	-0.0193*	0.0094*	0.0099*
	(0.0115)	(0.0057)	(0.0058)
Higher	-0.0219	0.0106	0.0112
	(0.0147)	(0.0072)	(0.0076)
Hcurrtage			
16-25 (ref)			
26-39	-0.0251	0.0121	0.01304
	(0.0204)	(0.0101)	(0.0104)
40+	-0.0043	0.0021	0.0022
	(0.0218)	(0.0108)	(0.0111)

Hoccupationgrp			
Agric Workers (ref)			
Sales/ Services	0.0274*** (0.0098)	-0.0130*** (0.0047)	-0.0143*** (0.0052)
Prof/Tech/Managerial	0.0133 (0.0124)	-0.0063 (0.0058)	-0.0071 (0.0065)
Manual Workers	0.0405*** (0.0096)	-0.0196*** (0.0047)	-0.0209*** (0.0050)
Not Working	0.0306 (0.0274)	-0.0146 (0.0135)	-0.0160 (0.0139)
Residency			
Urban (ref)			
Rural	-0.0013 (0.0081)	0.0006 (0.0039)	0.0007 (0.0042)
Relgn			
Christian(ref)			
Muslim	0.1440*** (0.0103)	-0.0743*** (0.0056)	-0.0697*** (0.0049)
Traditionalist	0.0330 (0.0327)	-0.0150 (0.0154)	-0.0180 (0.0172)
Other	-0.4529*** (0.1379)	0.0413*** (0.0606)	0.4117*** (0.1983)
Wlthindex			
Poor (ref)			
Middle	0.0048 (0.0102)	-0.0023 (0.0048)	-0.0026 (0.0054)
Rich	0.0184 (0.0118)	-0.0088 (0.0056)	-0.0096 (0.0062)
Region			
North Central (ref)			
North East	0.1383*** (0.0147)	-0.059*** (0.0067)	-0.0793*** (0.0082)
North West	0.2721*** (0.0127)	-0.1364*** (0.0070)	-0.1357*** (0.0068)
South East	0.0099 (0.0159)	-0.0035 (0.0056)	-0.0065 (0.0104)
South South	0.1313*** (0.0138)	-0.0555*** (0.0061)	-0.0758*** (0.0080)
South West	0.2821*** (0.0115)	-0.1430*** (0.0060)	-0.1391*** (0.0066)
Childgender			
Male (ref)			
Female	0.0076 (0.0063)	-0.0036 (0.0030)	-0.0039 (0.0033)

Ownland			
Does not own (ref)			
Alone only	-0.0039 (0.0123)	0.0019 (0.0059)	0.0020 (0.0063)
Jointly	-0.0233** (0.0095)	0.0110** (0.0044)	0.0122* (0.0050)
Mobileph			
No (ref)			
Yes	-0.0060 (0.0092)	0.0023 (0.0045)	0.0031 (0.0047)

P-values: significance ***1%, **5%; *10%

4.2.2 Discussions of Marginal Effects Estimations

Age

Table 5 shows the marginal effects for Model I. As the age of married woman increases by a year, she is 0.14 percentage point more probable to have full autonomy concerning her health decisions other things being equal. Ceteris paribus, an additional age of the respondent increases the probability by 0.24 percentage point of the respondent making personal health decisions with her husband. Also, an additional year in the married woman's current age reduces the chances of the husband making her health decision by 0.38 percentage point holding other things constant. On a comparative outlook, the results show that women are more probable to make joint health decisions with their husbands relative to taking independent decisions or husband having sole monopoly as woman's age increases.

In Model II, other things being equal, an additional age of a married respondent significantly increases the probability of having full control over her earnings by 0.2 percentage point. The respondent is 0.1 percentage point less probable to discuss with her partner about her earnings. Furthermore, an additional year to the respondent's current

age will reduce the probability of the husband having full control over her earning by 0.1 percentage point ceteris paribus. More broadly, as the woman 'current age increases in her marriage, she is more probable to spend her earnings without asking for permission from her husband or exclusively by her partner. This is consistent with the findings of Bloom et al. (2001), in their paper age was marginally significant in the models for high control over finances and decision-making power. Thus, increase in age, especially for the women, especially for women leads to greater autonomy in household decision-making, this is in conformity with some studies on Nepal, Bangladesh, rural Ghana and Ethiopia (Senarath & Gunawardena, 2009; Addai, 2000; Mekonnen & Mekonnen, 2003).

However, the age of the respondent's husband is insignificant in explaining the chances of making decision in both models (Table 5 and Table 6).

Educational Attainment

On the importance of education in determining women's autonomy, a significant relationship in all levels of education is observed in the health model (Model I). For example, a married woman in the primary school category is 1.7 percentage points more probable to have full autonomy regarding her health decisions compared to a woman without education. On the other hand, she is 3.6 points more probable to make her decisions with her partner if compared to a woman with no education. From the result, it is 5.3 percentage points less likely that her husband will solely decide how the woman goes about her health-related decisions. At the secondary level of education, an additional year of secondary schooling increases the probability by 2.6 percentage points that health decisions will be made autonomously by a married woman relative to one with no education. Other things being equal, a woman in the partial autonomy case is 5.2 points

more probable to make health decisions jointly with her husband as compared to a woman with no education. On the other hand, her husband is 7.9 points less probable to make health decisions for her. At higher levels of respondent's education, we do find significant effects on autonomy. A one-year increase in the higher education, means that the respondent's husband is 8.6 points less probable to make independent decision about her health-related matters. In conclusion, like that of respondent's age explanation on health decision, she is more probable to make her decisions with her husband regardless the level of her education. The impact of a woman's educational level in this study is consistent with the related research work done in Ethiopia (Nigatu et al., 2014).

Moving on to the earnings model (Model II), Table 6 depicts the relationship between woman's education and autonomy on earnings decisions. The primary and secondary levels of education are statistically insignificant. However, at the higher level of education the respondent is 5.8 percentage points less probable to decide about her earning spending as compared to a woman with no education. On the other hand, at that level she is 2.7 points more probable to make decisions about her earnings with her husband than a woman with no education. Ceteris paribus, relative to a woman with no education the respondent's husband is 3.1 points more probable to decide on how her income is being spent.

Studies have shown that allocation of resources in the hands of women improves spending and management. Elo (1992) explored the role women's education in Peru in the utilization of maternal health-care services in Peru. A logit regression model showed that the years of schooling significantly affected the use of health care facilities during

prenatal and delivery time. Contrasting results were, however, evident in Nisar & White (2003) for Karachi women.

In Model I, husband's educational level is significant in determining the autonomy level of the woman. Ceteris paribus, a married woman whose husband acquired primary school education was 1.9 percentage points more likely to have full autonomy regarding her health decisions compared to a woman's husband with below primary education. Spousal communication and level of understanding increases as education level goes higher. With an additional year to a respondent's husband in secondary school both partners are 2.7 percentage points more probable to make health decisions for the woman.

A respondent whose partner is in secondary school is 1.5 points more likely to make her own health decision without her husband's permission relative to one whose husband has no education. Overall, an additional year of schooling for the respondent's partner increases the probability of the woman having a joint decision with her husband as compared to a woman whose husband is not educated. At higher levels of education, the husband's education shows an insignificant relationship between woman autonomy and health decision.

In Model II, the husband's literacy at primary and higher levels does not explain female autonomy in spending her earned income. Statistical significant result, however, obtains if secondary level of education has been acquired by the husband. Other things equal, a respondent's husband at the secondary level is associated with a lower probability of her making full autonomous earnings decision by 1.9 percentage points relatively to a woman whose husband has no education. Under partial autonomy, the

respondent is 0.9 point more likely to make a joint decision with her spouse as compared to a woman whose husband is without education. Surprisingly, at the secondary level of husband's education, he is 1 percentage point more likely to be the sole decision maker about the spending of the respondent's income as compared to one whose husband has no education.

Occupation

Model I, Table 5 shows significant marginal effects of types of occupation on the probability of a woman making health decision about herself. Controlling for other sociodemographic variables, a woman working as an *agricultural worker* is 4.3 percentage points more likely to make autonomous personal health decision as compared to a woman not working, the reference occupation. Under partial autonomy, a typical woman in agriculture is 10.1 points more likely to make a joint health decision with her partner. On the other hand, under no autonomy, an agricultural woman's husband is 14.4 points less likely to make a health decision for her, which makes the result comparable with the result for agricultural woman under partial autonomy. For a woman in *sales or service*, the likelihood that she will make her health decision independently of her husband is greater by 4.2 percentage points compared to a woman not working. A woman under partial autonomy is 10.1 points more likely than a woman not working to make a joint decision with her husband. However, for the no autonomy group the respondent's husband is 14.3 less likely to make a decision for her if she is in sales or service as compared to a woman not working.

A woman whose profession is under the *professional/technical/managerial* and has full autonomy is 5.1 percentage points more likely to make her own health decision. For a woman under partial autonomy the probability that a joint decision with her husband will occur increases by 11.4 points, and for one with full dependence on her husband the probability of her partner making a health decision falls further by 16.5 points which means she acquires slightly more autonomy now despite being in the no autonomy group of women. In the same vein, the results for a typical woman engaged in *manual work,* whether skilled or unskilled, show a 3.1 percentage point greater probability that she will make an autonomous health decision as compared to a woman not working. In the partial autonomy context, the respondent is likely to have an 8.0 point greater chance of a joint decision and in the case of no autonomy, the chances of the partner making the sole decision for her is 11.1 points less. Broadly speaking, across occupation groups, a respondent working at a professional/ technical/managerial job is more likely to be her sole decision maker on health-related matters. It is worth mentioning that there exists significant positive relationship between female work and her health autonomy (Grogan, 2015).

What about decisions about spending a woman's own earnings in terms of her occupation type (Model II)? These results are given in Table 6. In sales- service occupation the woman is 8.8 percentage points more likely to decide on how to spend her earnings as compared to a woman working in agriculture. The partial autonomy case shows that the respondent woman is 3.7 percentage points less likely to make a financial decision with her husband if she is works as a professional/technical/managerial worker. Also, the husband is 4.6 points less likely to have control over the spending of her income

(under no autonomy) relative to an agricultural woman. A woman working as a manual worker is 5.1 points more likely to make her own autonomous spending decision. A manual worker woman involving her husband to make a joint decision is 2.7 points less likely to involve her husband compared to one in agriculture. Also, her husband is 2.4 points less likely to be the sole decision maker regarding her income spending as compared to an agriculture worker, in another words this means that the respondent gets slightly more autonomy now. In comparison, Cicekliogluu (2005) finds that the husband's occupation significantly impacts the use of primary health care in western urban district of Turkey.

Husband's occupation matters in explaining the relationship between women autonomy and household decisions especially earnings. In Model II, A woman whose husband works at sales and services or at a manual job is 2.7 percentage points and 4.0 percentage points respectively more likely to be a sole decision maker regarding her earnings as compared to a woman whose husband is an agricultural worker.

Number of Living Children and Children Gender

For both Model I and Model II the number of living children turns out to be an insignificant determinant of women's autonomy in Nigeria. Some papers in the literature verify the existence of links between the number of living children and women autonomy, but surprisingly, this is not the case in Nigeria. In data from two South Asian countries (Nepal and Bangladesh) as analyzed by Senarath & Gunawardena (2009), the number of children was significantly positively related to women's autonomy whereas in

Jordan, Obermeyer & Potter (1991) find that a respondent with no child is more likely to utilize health care services in order for her to take care of her child's welfare better.

Religion

A Muslim woman is found to be 3.9 percentage points less likely to make her health decision autonomously as compared to a Christian woman. This result is comparable with a similar finding for Ethiopia by Woldemicael & Tenkorang (2010). After controlling for variables such as education, work status, religion, wealth and residence, these authors conclude that Muslim women in Ethiopia are less likely to decide on their health-related matters by themselves compared to Christian women.

Furthermore, a Muslim respondent woman is 8.3 percentage points less likely to have a joint decision with her husband as compared to a Christian woman. A Muslim respondent's husband is also 2.0 points more likely to make health decisions for her as compared to a Christian woman. However, the result for the respondent being a traditionalist or having other religious belief was insignificant. But in Model II, a woman having other religious belief is 4.5 percentage points less likely to have control over earnings relative to a Christian woman. Ceteris paribus, a married woman practicing other religions is 4.1 points more likely to have her husband be the sole decision maker for her as compared to a Christian woman regarding how to spend her earnings.

Residence

There is big distinction between women living in an advanced socioeconomic area which is synonymous to living in an urban area and those in the rural areas because

the urban dwellers are exposed to information and other economic activities that could boost their status. Women in rural areas are faced with much greater incidence of poverty (Bogale et al., 2010 in Ethiopia; Chakraborty et al., 2003). So, the possibility that women living in rural areas are sole decision-makers is low, which is one of the reasons why this variable needed to be controlled in both of the models. In Model I, a woman whose place of residence is rural, all else being equal, is 0.7 percentage point less likely to make her health decision relative to a woman in the urban area. Women in urban areas are more naturally exposed to modern ways of living than are rural women. Under partial autonomy, a woman is 1.3 points more likely to make a joint decision with her husband than her rural counterpart. All else being equal, there is 2 percent chances that her husband would be the sole decision maker regarding her health as compared to a woman in the urban area. Using logistic regression, Celik and Hothkiss (2000) after distinguishing women living in rural areas from urban areas find that women living in urban areas are more likely to use health care services leading to a reduction of maternal mortality rates in Turkey. In Model II, the decisions about financial autonomy had no bearing on whether the woman lived in a rural area or urban.

Region

Nigeria is different across its regions in terms of women's decision-making about health care or their finances. A woman from the *North East* is 1.6 percentage points less likely to make her autonomous health decision as compared to woman from North Central. The respondent is 3.6 points less likely to make a decision with her husband relative to a North Central woman holding other variables constant. In other words, there

is a 5.2 percentage point better chance that her husband will make her decision for her as compared to a woman from a North Central. However, a woman from *North West* is 4.6 points less likely to have full autonomous power regarding her health decision., a 14.8 point less likely that a partially autonomous woman from North West will make a joint decision with her husband, but that a woman's husband is 19.4 points more likely to be making health decisions for her. This is unsurprising to some extent because there are factors influencing how women are seen in some regions. The result for South-South and South East is insignificant. On the other hand, there is a significant positive association between a woman from South West and the level of autonomy. The respondent is 4.3 points more probable to make her own health decision. Broadly speaking, the respondent is 6.4 points more probable to make a joint decision with her husband. Finally, in the least autonomous group the probability of the respondent's husband making a health decision for her is 10.7 points smaller relative to a woman from North Central.

In Model II, although a respondent from *South East* shows that she is more likely to make her financial decisions, but the result was statistical insignificant. On the other hand a woman from the *South West* is 28.2 points more likely to make spending decisions relative to a woman from the reference category. On the other hand, a respondent is 13.6 points less likely to have a discussion about her earnings with her husband or having her partner as the sole decision maker. Surprisingly, a woman from a North East and North West region is 13.8 points and 27.2 points more likely to make autonomous decision on how to spend her earnings respectively as compared to a woman from the refence group.

Wealth Index/ Media Exposure

In Table 5, a woman of medium wealth status is 1.7 percentage points more probable to be the sole decision maker regarding personal health as compared to a poor woman. In the same wealth index, the respondent is 3.3 points more likely to have a joint decision with her husband regarding her health while controlling for other explanatory variables relative to a poor woman. This means her husband is 5.0 percentage points less likely to be the sole decision maker as compared to a poor woman. Other things being equal, a rich woman is 2.0 points more probable to be autonomous in her health decision relative to a poor woman. Finally, the respondent's husband is 5.7 points less likely to make a health decision on her behalf as compared to a poor woman. We can see from Table 5 that as a respondent moves from the middle income to the rich status, she is more probable to make her health decision jointly with her husband. Model I shows that a married woman having a mobile phone is virtually equally likely as one with no phone to make autonomous health decisions. Having a mobile phone has no economically significant effect on health decision making. This contrasts with Sharan & Valente (2002) who report that exposure to programs and talk shows on social media influences how women make decisions.

In Model II as well, a woman having a phone shows an insignificant relationship with her financial decision making.

Distance to Health Facility

We find an insignificant association between distance to health facility and woman's autonomy regarding her health decision in Model I. Egunjobi (1983) who had

studied the factors influencing the choice of health facilities in Oyo, Nigeria, also argued that distance is not an important factor in health usage. However, Rahaman et al., (1982) in their study for the usage for health facility by women in Bangladesh had found that nearness of health care services had an influence on their usage. Distance to health care facility was also important for its usage especially by pregnant women in Gulele district Addis Ababa, Ethiopia (Fantahun & Olwit, 1995).

Asset Ownership

In Model I, the result is statistically insignificant which is consistent with the findings of Nielsen et al., (2001) who established that land ownership and house ownership were insignificant predictors of women attending antenatal care among rural population in South India.

Model II results indicate that when a respondent jointly owns a land with her husband she is 2.3 percentage point less likely to decide on how her income is spent relative to a woman who does not own a land. However, the respondent is 1.1 points more likely to have a joint decision with her husband regarding her spending as compared to a woman with no land ownership. Also, the husband is 0.1 percentage point more likely to be the sole decision maker regarding her earnings as compared to a woman who does not own a land. Consistently with joint ownership of land, a woman is more likely to decide on how to spend her earned income jointly with her husband relative to a woman who does not own a land.

Two dimensions of women autonomy was explored in this study, the restriction to these two specific measures is one limitation of this research work. Future researchers

should include decision making patterns with respect to household purchases of small items on a daily basis versus occasional big ticket items, as well as the degree of freedom of movement. It is also important to note that study only focused on currently married women. Further study could include other groups of women.

Chapter Five

Conclusion and Recommendations

Women autonomy in healthcare decisions and her autonomy regarding how she spends her own earnings are very important as a research topic. It is interesting to know that cultural beliefs can restrict the autonomous power of women in a male dominated society like Nigeria. Several awareness programs have evolved over the years to limit this stereotype view of women and their decision-making.

In the context of various strands of empirical literature studying women autonomy in health decision-making, we can draw the following conclusion from this research: a woman's age, education, and occupation; her husband' primary and secondary school level, her place of residence, household wealth and some regions of the country have a statistically significant influence on her autonomy. Surprisingly, the number of living children a woman has, land ownership and proximity of the health facility are found not to have a significant influence on a woman's health decision. Furthermore, level of exposure that comes with possessing a mobile phone does not contribute to a greater autonomy for married women. In terms of financial decision making according to Model II, we find that a woman's current age, occupation, her husband's job in sales or services, her residence in South-South or South West are more significant predictors of her higher autonomy.

Among notable policy implications that can be drawn from this study, the Nigerian government should increase its allocation on education to encourage girls' education more. Higher the women's education levels, higher are their chances of making household decisions autonomously, especially decisions regarding health care, which is

likely to subsequently reduce maternal mortality rate and address other health-related issues better.

Secondly, government economic policies should be on improving and encouraging women to participate in the labor force. Increase in the labor force participation rate of women is likely to expand their role in decision making not only in matters of health but in achieving a more efficient allocation of resources for the household welfare. Women empowerment is likely to promote women's financial independence through employment from paid occupations.

Interestingly, another effective strategy is improving husband's education, because educational attainment exposes husbands to necessary information in evaluating the importance of women's health decisions. A more educated husband has a better chance of agreeing to greater autonomy for the woman and of reduction in maternal mortality rate and other health related problems.

There is also need for more measures to bridge the gap between women living in rural and urban areas through greater implementation of rural development programs to expand basic amenities and infrastructure. Improvements in literacy level, as well as electricity and road networks are likely to have a high payoff through a rise in labor productivity and woman's higher empowerment.

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Appendix

Table 3 Characteristics		**Personal Health Care**					
	Autonomy		**Partial autonomy**		**No autonomy**		
	Total	**Percent**	**Total**	**Percent**	**Total**	**Percent**	**Total**
Age							
15-19	23	1.39	314	3.61	1,622	10.19	1,959
%	1.17		16.03		82.80		7.45
20-34	647	39.14	4,558	52.35	8,801	55.27	14,006
%	4.62		32.54		62.84		53.29
35-49	983	59.47	3,834	44.04	5,502	34.55	10,319
%	9.53		37.15		53.32		39.26
Total	1,653 (6.29%)		8,706 (33.12%)		15,925 (60.59%)		**26,284**
No. of Living Children							
0	65	3.93	684	7.86	1,706	10.71	2,455
%	2.65		27.86		69.49		9.34
1-2	456	27.59	2,643	30.36	4,814	30.23	7,913
%	5.76		33.40		60.84		30.11
3-4	564	34.12	2,837	32.59	4,442	27.89	7,843
%	7.19		36.17		56.64		29.84
5+	568	34.36	2,542	29.20	4,963	31.16	8,073
%	7.04		31.49		61.48		30.71
Total	1,653 (6.29%)		8,706 (33.12%)		15,925 (60.59%)		**26,284**
Child Gender							
Male	783	48.88	4,107	50.67	7,329	50.78	12,219
%	6.41		33.61		59.98		50.62
Female	819	51.12	3,998	49.33	7,104	49.22	11,921
%	6.87		33.54		59.59		49.38
Total	1,602 (6.64%)		8,105 (33.57 %)		14,433 (59.79%)		**24,140**
Woman's Education							
No education	314	19.00	2,165	24.87	9,936	62.39	12,415
%	2.53		17.44		80.03		47.23
Primary	472	28.55	2,188	25.13	2,675	16.80	5,335
%	8.85		41.01		50.14		20.30

Secondary	675	40.83	3,105	35.67	2,697	16.94	6,477
%	10.42		47.94		41.64		24.64
Higher	192	11.62	1,248	14.33	617	3.87	2,057
%	9.33		60.67		30.00		7.83
Total	1,653 (6.29%)		8,706 (33.12%)		15,925 (60.59%)		**26,284**
Woman's Occupation							
Not working	132	8.03	1,272	14.68	5,878	37.23	7,282
%	1.81		17.47		80.72		27.90
Agric Workers	296	18.02	1,448	16.71	1,431	9.06	3,175
%	9.321		45.61		45.07		
Prof/tech/m anagerial/ clerical	172	10.47	868	10.02	396	2.51	1,436
%	11.98		60.45		27.58		5.50
Sales/Servic es	911	55.45	4,239	48.92	6,214	39.36	11,364
%	8.02		37.30		54.68		
Manual workers	132	8.03	838	9.67	1,869	11.84	2,839
%	4.65		29.52		65.83		10.88
Total	1,643 (6.30%)		8,665 (33.20%)		15,788 (60.50%)		**26,096**
Husband's Age							
16-25	40	2.42	306	3.51	1,111	6.98	1,457
%	2.75		21.00		76.25		5.54
26-39	440	26.62	3,324	38.18	6,001	37.68	9,765
%	4.51		34.04		61.45		37.15
40+	1,173	70.96	5,076	58.30	8,813	55.34	15,062
%	7.79		33.70		58.51		57.30
Total	1,653 (6.29%)		8,706 (33.12%)		15,925 (60.59%)		**26,284**
Husband's Education							
No education	242	14.79	1,670	19.29	8,172	51.83	10,084
%	2.40		16.56		81.04		38.70
Primary	431	26.34	1,986	22.94	2,559	16.23	4,976
%	8.66		39.91		51.43		19.09
Secondary	666	40.71	3,197	36.93	3,310	20.99	7,173
%	9.28		44.57		46.15		27.52
Higher	297	18.15	1,805	20.85	1,725	10.94	3,827

%	7.76		47.16		45.07		14.69
Total	1,636 (6.28%)		8,658 (60.50%)		15,766 (60.50%)		**26,060**
Husband's Occupation							
Not working	50	3.05	141	1.63	109	0.69	300
%	16.67		47.00		36.33		1.15
Agric Workers	451	27.53	2,718	31.37	6,543	41.32	9,712
%	4.64		27.99		67.37		37.16
Prof/tech/managerial/ clerical	280	17.09	1,642	18.95	1,799	11.36	3,721
%	7.52		44.13		48.35		14.24
Sales/Services	352	21.49	1,847	21.32	4,104	25.92	6,303
%	5.58		29.30		65.11		24.12
Manual workers	505	30.83	2,316	26.73	3,279	20.71	6,100
%	8.28		37.97		53.75		23.34
Total	1,638 (6.27%)		8,664 (33.15%)		15,834 (60.58%)		**26,136**
Wealth Index							
Poor	298	18.03	2,277	26.15	9,083	57.04	11,658
%	2.56		19.53		77.91		44.35
Middle	390	23.59	1,736	19.94	2,876	18.06	5,002
%	7.80		34.71		57.50		19.03
Rich	965	58.38	4,693	53.91	3,966	24.90	9,624
%	10.03		48.76		41.21		36.62
Total	1,653 (6.29%)		8,706 (33.12%)		15,925 (60.59%)		**26,284**
Religion							
Other	0	0.00	5	0.06	6	0.04	11
%	0.00		45.45		54.55		0.04
Christian	1,200	72.77	5,536	63.92	3,817	24.08	10,553
%	11.37		52.46		36.17		40.34
Muslim	427	25.89	3,024	34.92	11,871	74.89	15,322
%	2.79		19.74		77.48		58.57
Traditionalist	22	1.33	96	1.11	157	0.99	275
%	8.00		34.91		57.09		1.05
Total	1,649 (6.30 %)		8,661 (33.11%)		15,851 (60.59%)		**26,161**
Residence							

Urban	894	54.08	4,025	46.23	4,134	25.96	9,053
%	9.88		44.46		45.66		34.44
Rural	759	45.92	4,681	53.77	11,791	74.04	17,231
%	4.40		27.17		68.43		65.56
Total	1,653 (6.29%)		8,706 (33.12%)		15,925 (60.59%)		**26,284**
Region							
North Central	294	17.79	1,823	20.94	2,028	12.73	4,145
%	7.09		43.98		48.93		15.77
North East	96	5.81	1,344	15.44	3,822	24.00	5,262
%	1.82		25.54		72.63		20.02
North West	83	5.02	1,060	12.18	7,142	44.85	8,285
%	1.00		12.79		86.20		31.52
South East	281	17.00	1,153	13.24	766	4.81	2,200
%	12.77		52.41		34.82		8.37
South South	292	17.66	1,389	15.95	1,120	7.03	2,801
%	10.42		49.59		39.99		10.66
South West	607	36.72	1,937	22.25	1,047	6.57	3,591
%	16.90		53.94		29.16		13.66
Total	1,653 (6.29%)		8,706 (33.12%)		15,925 (60.59%)		**26,284**
Distance to health Facility							
Small problem	392	23.76	2,100	24.22	5,621	35.42	8,113
%	4.83		25.88		69.28		30.98
Big problem	1,258	76.24	6,570	75.78	10,248	64.58	18,076
%	6.96		36.35		56.69		69.02
Total	1,650 (6.30%)		8,670 (33.11%)		15,869 (60.59%)		**26,189**
Ownership of Land							
Does Not Own	1,289	79.62	6,438	77.23	13,609	88.54	21,336
%	6.04		30.17		63.78		38.25
Respondent Alone	139	8.59	530	6.36	749	4.87	1,418
%	9.80		37.38		52.82		5.60
Jointly	191	11.80	1,368	16.41	1,013	6.59	2,572
%	7.43		53.19		39.39		10.16
Total	1,619 (6.39%)		8,336 (32.91%)		15,371 (60.69%)		**25,326**

Exposure							
Mobile Phone							
No	230	14.17	1,388	16.18	4,643	29.40	6,261
%	3.67		22.17		74.16		24.08
Yes	1,393	85.83	7,193	83.82	11,151	70.60	19,737
%	7.06		36.44		56.50		75.92
Total	1,623 (6.24 %)		8,581 (33.01%)		15,794 (60.75%)		**25,998**

Table 4 Characteristics		Financial Independence				
	Autonomy		Partial autonomy		No autonomy	
	Total	Percent	Total	Percent	Total	Percent	Total
Age							
15-19	553	4.53	97	2.86	84	4.76	734
%	75.34		13.22		11.44		4.23
20-34	6,089	49.88	1,723	50.87	935	52.94	8,747
%	69.61		19.70		10.69		50.38
35-49	5,566	45.59	1,567	46.27	747	42.30	7,880
%	70.63		19.89		9.48		45.39
Total	12,208 (70.32%)		3,387 (19.51%)		1,766 (10.17%)		**17,361**
No. of Living Children							
0	756	6.19	280	8.27	136	7.70	1,172
%	64.51		23.89		11.60		6.75
1-2	3,275	26.83	960	28.34	470	26.61	4,705
%	69.61		20.40		9.99		27.10
3-4	3,912	32.04	1,094	32.30	572	32.39	5,578
%	70.13		19.61		10.25		32.13
5+	4,265	34.94	1,053	31.09	588	33.30	5,906
%	72.21		17.83		9.96		34.02
Total	12,208 (70.32%)		3,387 (19.51%)		1,766 (10.17%)		**17,361**
Child Gender							
Male	5,846	50.51	1,615	51.40	872	53.01	8,333
%	70.15		19.38		10.46		50.94
Female	5,727	49.49	1,527	48.60	773	46.99	8,027
%	71.35		19.02		9.63		49.06
Total	11,573 (70.74%)		3,142 (19.21%)		1,645 (10.06%)		**16,360**
Woman's Education							
No education	5,782	47.36	650	19.19	634	35.90	7,066
%	81.83		9.20		8.97		40.70
Primary	2,531	20.73	882	26.04	457	25.88	3,870
%	65.40		22.79		11.81		22.29
Secondary	2,995	24.53	1,265	37.35	528	29.90	4,788
%	62.55		26.42		11.03		27.58
Higher	900	7.37	590	17.42	147	8.32	1,637
%	54.98		36.04		8.98		9.43
Total	12,208		3,387		1,766		**17,361**

	(70.32%)		(19.51%)		(10.17%)		
Woman's Occupation							
Agric Workers	997	8.20	743	22.07	481	27.38	2,221
%	44.89		33.45		21.66		12.85
Prof/tech/managerial/ clerical	781	6.43	496	14.73	134	7.63	1,411
%	55.35		35.15		9.50		8.17
Sales/Services	8,194	67.41	1,751	52.00	1,009	57.43	10,954
%	74.80		15.99		9.21		63.39
Manual workers	2,183	17.96	377	11.20	133	7.57	2,693
%	81.06		14.00		4.94		15.59
Total	12,155 (70.35%)		3,367 (19.49 %)		1,757 (10.17%)		**17,279**
Husband's Age							
16-25	423	3.46	104	3.07	84	4.76	611
%	69.23		17.02		13.75		3.52
26-39	3,960	32.44	1,284	37.91	631	35.73	5,875
%	67.40		21.86		10.74		33.84
40+	7,825	64.10	1,999	59.02	1,051	59.51	10,875
%	71.95		18.38		9.66		62.64
Total	12,208 (70.32%)		3,387 (19.51%)		1,766 (10.17%)		**17,361**
Husband's Education							
No education	4,624	38.21	457	13.56	482	27.50	5,563
%	83.12		8.21		8.66		32.30
Primary	2,374	19.62	834	24.76	415	23.67	3,623
%	65.53		23.02		11.45		21.04
Secondary	3,365	27.81	1,265	37.55	594		5,224
%	64.41		24.22		11.37	33.88	30.33
Higher	1,738	14.36	813	24.13	262		2,813
%	61.78		28.90		9.31	14.95	16.33
Total	12,101 (70.26%)		3,369 (19.56%)		1,753 (10.18%)		**17,223**
Husband's Occupation							
Not working	149	1.23	58	1.72	27	1.54	234
%	63.68		24.79		11.54		1.35

Agric Workers	3,863	31.80	1,041	30.87	779	44.31	5,683
%	67.97		18.32		13.71		32.90
Prof/tech/managerial/ clerical	1,765	14.53	723	21.44	242	13.77	2,730
%	64.65		26.48		8.86		15.80
Sales/Services	3,127	25.75	767	22.75	333	18.94	4,227
%	73.98		18.15		7.88		24.47
Manual workers	3,242	26.69	783	23.22	377	21.44	4,402
%	73.65		17.79		8.56		25.48
Total	12,146 (70.31%)		3,372 (19.52%)		1,758 (10.18%)		**17,276**
Wealth Index							
Poor	5,045	41.33	831	24.53	642	36.35	6,518
%	77.40		12.75		9.85		37.54
Middle	2,198	18.00	733	21.64	447	25.31	3,378
%	65.07		21.70		13.23		19.46
Rich	4,965	40.67	1,823	53.82	677	38.34	7,465
%	66.51		24.42		9.07		43.00
Total	12,208 (70.32%)		3,387 (19.51%)		1,766 (10.17%)		**17,361**
Religion							
Other	0	0.00	2	0.06	3	0.17	5
%	0.00		40.00		60.00		0.03
Christian	4,312	35.45	2,579	76.53	1,087	61.97	7,978
%	54.05		32.33		13.62		46.15
Muslim	7,756	63.76	752	22.31	629	35.86	9,137
%	84.89		8.23		6.88		52.85
Traditionalist	96	0.79	37	1.10	35	2.00	168
%	57.14		22.02		20.83		0.97
Total	12,164 (70.36%)		3,370 (19.49%)		1,754 (10.15%)		**17,288**
Residence							
Urban	4,699	38.49	1,501	44.32	600	33.98	6,800
%	69.10		22.07		8.82		39.17
Rural	7,509	61.51	1,886	55.68	1,166	66.02	10,561
%	71.10		17.86		11.04		60.83
Total	12,208 (70.32%)		3,387 (19.51%)		1,766 (10.17%)		**17,361**
Region							
North	1,595	13.07	829	24.48	626	35.45	3,050

Central							
%	52.30		27.18		20.52		17.57
North East	1,568	12.84	453	13.37	144	8.15	2,165
%	72.42		20.92		6.65		12.47
North West	4,652	38.11	307	9.06	236	13.36	5,195
%	89.55		5.91		4.54		29.92
South East	669	5.48	584	17.24	358	20.27	1,611
%	41.53		36.25		22.22		9.28
South South	1,134	9.29	705	20.81	358	15.63	2,115
%	53.62		33.33		13.05		12.18
South West	2,590	21.22	509	15.03	126	7.13	3,225
%	80.31		15.78		3.91		18.58
Total	12,208 (70.32%)		3,387 (19.51%)		1,766 (10.17%)		**17,361**
Ownership of Land							
Does Not Own	9,977	84.50	2,269	70.01	1,299	77.18	13,545
%	73.66		16.75		9.59		80.96
Respondent Alone	737	6.24	247	7.62	146	8.67	1,1309
%	65.22		21.86		12.92		6.75
Jointly	1,093	9.26	725	22.37	238	14.14	2,056
%	53.16		35.26		11.58		12.29
Total	11,807 (70.57%)		3,241 (19.37%)		1,683 (10.06%)		**16,731**
Exposure							
Mobile Phone							
No	2,661	22.05	447	13.41	376	21.50	3,484
%	76.38		12.83		10.79		20.31
Yes	9,407	77.95	2,887	86.59	1,373	78.50	13,667
%	68.83		21.12		10.05		79.69
Total	12,068 (70.36%)		2,887 (19.44%)		1,749 (10.20%)		**17,151**

Table 7: Health Decision Oprobit Regression Results

Variables	Coefficient
Womanage	0.0126*** (0.0016)
Womanedu	
No edu (ref)	
Primary	0.1708*** (0.0286)
Secondary	0.2494*** (0.0322)
Higher	0.2716*** (0.0493)
woccupationgrp	
Not Working (ref)	
Agric Workers	0.4704*** (0.0334)
Sales/ Services	0.4678*** (0.0247)
Prof/Tech/Managerial	0.5347*** (0.0460)
Manual Workers	0.3684*** (0.0338)
numchildren	
0 (ref)	
1-2	-0.0451 (0.0814)
3-4	-0.0636 (0.0817)
5+	-0.1221 (0.0828)
Hubbyedu	
No edu (ref)	
Primary	0.1702*** (0.0230)
Secondary	0.1364*** (0.0308)
Higher	0.0212 (0.0400)
Hcurrtage	
16-25 (ref)	
26-39	-0.0052

	(0.0508)
40+	0.0282 (0.0551)
hoccupationgrp	
Agric Workers (ref)	
Sales/ Services	-0.0958*** (0.0266)
Prof/Tech/Managerial	-0.0158 (0.0336)
Manual Workers	0.0063 (0.0260)
Not Working	0.3230*** (0.0776)
Residency	
Urban (ref)	
Rural	-0.0649*** (0.0226)
Relgn	
Christian(ref)	
Muslim	-0.3772*** (0.0254)
Traditionalist	-0.0541 (0.0810)
Other	-0.1313 (0.3669)
Wlthindex	
Poor (ref)	
Middle	0.1625*** (0.0278)
Rich	0.1855*** (0.0328)
Region	
North Central (ref)	
North East	-0.1495*** (0.0313)
North West	-0.6035*** (0.0320)
South East	0.0629* (0.0363)
South South	-0.0259 (0.0337)
South West	0.3037*** (0.0304)
childgender	

Male (ref)	
Female	0.0356*** (0.0172)
distancehealth	
Big Problem (ref)	
Small problem	0.0277 (0.0207)
Ownland	
Does not own (ref)	
Alone only	-0.0052 (0.0360)
Jointly	-0.0208 (0.0270)
Mobileph	
No (ref)	
Yes	-0.0469* (0.0246)
Constant 1	-0.8578
Constant 2	-2.3834
Sample	22342
Pseudo R2	0.1752
Prob>Chi square	0.0000
Log Likelihood chi square	6687.97
Log Likelihood	-15744.423

P-values: significance ***1%, **5%; *10%

Table 8: Earnings Decision Oprobit Regression Results

Variables	**Coefficient**
Womanage	0.0057*** (0.0020)
Womanedu	
No edu (ref)	
Primary	0.0265 (0.0368)
Secondary	-0.0619 (0.0412)
Higher	-0.1946*** (0.0617)
woccupationgrp	
Agric Workers (ref)	

Sales/ Services	0.2841*** (0.0348)
Prof/Tech/Managerial	0.2632*** (0.0585)
Manual Workers	0.4455*** (0.0458)
numchildren	
0 (ref)	
1-2	0.0263 (0.1108)
3-4	-0.0146 (0.1108)
5+	-0.0117 (0.1119)
Hubbyedu	
No edu (ref)	
Primary	-0.0422 (0.0383)
Secondary	-0.0666*** (0.0397)
Higher	-0.0753 (0.0503)
Hcurrtage	
16-25 (ref)	
26-39	-0.0864 (0.0718)
40+	-0.0150 (0.0768)
hoccupationgrp	
Agric Workers (ref)	
Sales/ Services	0.0934*** (0.0336)
Prof/Tech/Managerial	0.0450 (0.0418)
Manual Workers	0.1398*** (0.0333)
Not Working	0.1048 (0.0960)
residency	
Urban (ref)	
Rural	-0.0045 (0.0281)
relgn	
Christian(ref)	

Muslim	0.4746*** (0.0330)
Traditionalist	0.0992 (0.1001)
Other	-1.3584*** (0.5478)
wlthindex	
Poor (ref)	
Middle	0.0165 (0.0349)
Rich	0.0635 (0.0407)
region	
North Central (ref)	
North East	0.3866*** (0.0413)
North West	0.8447*** (0.0399)
South East	0.0265 (0.0427)
South South	0.3657*** (0.0397)
South West	0.8860*** (0.0377)
childgender	
Male (ref)	
Female	0.0261 (0.0218)
ownland	
Does not own (ref)	
Alone only	-0.0134 (0.0422)
Jointly	-0.0791*** (0.0317)
mobileph	
No (ref)	
Yes	-0.0202 (0.0319)
Constant 1	0.2884
Constant 2	-0.5522
Sample	15246
Pseudo R2	0.1181
Prob>Chi square	0.0000
Log Likelihood chi	2839.17

square	
Log Likelihood	-10601.6

P-values: significance ***1%, **5%; *10%

HealthDecision Correlation Matrix

	womanc	lvgchildr	childgn	woman	woccu	hcurrtg	hubbye	hoccup	wlthind	relgn	residnc	region	distanht	ownlan	mobilep
woman	1														
lvgchild	0.5403	1													
childgn	0.0176	0.021	1												
woman	0.0291	-0.195	-0	1											
woccup	-0.111	0.007	-0	-0.28	1										
hcurrtg	0.6519	0.447	0.014	-0.08	-0	1									
hubbye	-0.024	-0.16	-0	0.684	-0.2	-0.1	1								
hoccup	-0.071	0.009	-0	-0.19	0.12	-0.1	-0.3	1							
wlthind	0.1039	-0.092	0.008	0.642	-0.2	-0	0.6	-0.14	1						
relgn	-0.126	0.061	0.01	-0.53	0.11	0.01	-0.42	0.039	-0.39	1					
residnc	-0.093	0.06	-0.01	-0.42	0.18	-0	-0.34	0.089	-0.58	0.19	1				
region	0.123	-0.044	0.014	0.336	-0.1	0.02	0.21	0.034	0.37	-0.34	-0.29	1			
distanht	0.0386	-0.052	0.008	0.228	-0.1	0.01	0.23	-0.06	0.29	-0.08	-0.26	0.1	1		
ownlan	0.128	0.046	-0.02	0.187	-0.1	0.07	0.16	-0.07	0.14	-0.22	-0.04	0.1	0.007	1	
mobilep	0.0152	-0.034	0.001	0.32	-0.1	-0	0.32	-0.08	0.45	-0.19	-0.25	0.1	0.193	0.06	1

EarningsDecision Correlation Matrix

	womanc	lvgchildr	childgnd	womaned	woccupa	hcurrtge	hubbye	hoccupa	wtthind	relgn	residncy	region	ownland	mobileph
womancur	1													
lvgchildren	0.5406	1												
childgnder	0.0178	0.0213	1											
womanedu	0.0291	-0.195	-0.005	1										
woccupatn	-0.111	0.0064	-0.003	-0.282	1									
hcurrtge	0.6518	0.4467	0.0136	-0.084	-0.045	1								
hubbyedu	-0.023	-0.16	-8E-04	0.6841	-0.192	-0.084	1							
hoccupatn	-0.07	0.0098	-0.003	-0.195	0.1221	-0.08	-0.3	1						
wtthindex	0.1039	-0.092	0.0074	0.6419	-0.238	-0.002	0.596	-0.142	1					
relgn	-0.125	0.0616	0.0103	-0.53	0.1069	0.0138	-0.43	0.038	-0.392	1				
residncy	-0.093	0.0601	-0.007	-0.416	0.1763	-0.018	-0.34	0.09	-0.579	0.189	1			
region	0.123	-0.044	0.0136	0.3363	-0.116	0.0244	0.213	0.034	0.365	-0.34	-0.293	1		
ownland	0.1283	0.046	-0.016	0.1879	-0.051	0.0657	0.157	-0.067	0.139	-0.22	-0.037	0.078	1	
mobileph	0.0157	-0.033	0.0014	0.3199	-0.101	-0.02	0.324	-0.076	0.451	-0.19	-0.245	0.149	0.0647	1